

## CLAIMS

### WHAT IS CLAIMED IS:

1. A device having an embedded supply consumption rate test capability, the device being of the type that has a processor, and that requires at least a consumable supply to produce output; the device comprising:

an operating interface having at least a standard output control;

an engine module that consumes the supply to produce the output; and

a memory module storing an instruction set for causing said engine module to produce a standard unit of output, said memory module being linked to said engine module, said memory module being linked to said standard output control whereby selection of said standard output control will cause the device to transmit said instruction set to said engine module for production of said standard unit of output by said engine module;

whereby the supply consumption rate may be determined by measuring the consumable supply consumed in producing said standard unit of output.

2. A device as defined by claim 1 wherein the device comprises a plurality of additional components, and wherein said memory module is linked to said engine module by a linkage that bypasses all of said plurality of additional components.

3. A device as defined by claim 1 wherein the device comprises a printer, and wherein:

said instruction set for producing a standard unit of device output stored in said memory module comprises a marking agent test page data file;

said standard unit of output comprises a marking agent test page;

and

wherein said engine module comprises a print engine module for producing a printed page from a formatted data file.

4. A printer as defined by claim 3 wherein the printer further comprises:

a formatter linked to said print engine module for formatting incoming print data files; and

wherein said memory module is linked to said print engine module with a linkage that bypasses said formatter.

5. A printer as defined by claim 4 wherein said memory module comprises a subcomponent of said formatter.

6. A printer as defined by claim 3 wherein said marking agent test page comprises a page having at least a color image thereon.

7. A printer as defined by claim 3 wherein said marking agent test page comprises a first and a second marking agent test page, said first marking agent test page having only black images thereon and said second marking agent test page having at least a color image thereon.

8. A printer as defined by claim 3 wherein said memory module comprises an integrated circuit chip.

9. A printer as defined by claim 3 wherein the printer further comprises an engine controller for controlling said print engine module, and wherein said memory module comprises a sub-component of said engine controller.

10. A printer as defined by claim 3 wherein said operating interface comprises a user accessible control panel.

11. A printer having an embedded marking agent consumption rate test capability, the printer comprising:

a user accessible control panel having a plurality of controls for controlling the printer, said plurality of controls comprising at least a first marking agent test page control;

a print engine module for producing a printed page from a formatted data file;

a formatter linked to said print engine module, said formatter for formatting incoming unformatted print data files and transmitting said formatted print data files to said print engine module for printing;

a memory module linked to said print engine module with a linkage that bypasses said formatter, said memory module storing at least a first marking agent test page data file, said first marking agent test page data file comprising instructions for printing a marking agent test page, said memory module linked to said first marking agent test page control whereby selection of said first marking agent test page control will cause said memory module to print said first marking agent test page; and

whereby the marking agent consumption rate may be determined by measuring the marking agent consumed in producing said first marking agent test page.

12. A printer as defined by claim 11 wherein:

said memory module further storing a second test page data file, said first test page data file comprising data for printing a first test page comprising a plurality of black characters, and said second test page data file comprising data for printing a second test page comprising at least a color image;

said plurality of controls further comprising a second marking agent test page control; and

said memory module is linked to said second marking agent test page control, whereby selection of said second marking agent test page control will cause said memory module to transmit said second marking agent test page data file to said print engine module for printing of said second marking agent test page.

13. A printer as defined by claim 11 wherein said memory module comprises a sub-component of said formatter.

14. A printer as defined by claim 11 wherein said memory module comprises a sub-component of said print engine module.

15. A printer as defined by claim 11 wherein said memory module comprises a sub-component of said user accessible control panel.

16. A printer having an embedded marking agent consumption rate test capability, the printer comprising:

a user accessible control panel having a plurality of controls for controlling the printer, said plurality of controls comprising at least a marking agent test page control;

a print engine module for producing a printed page from a formatted data file;

a formatter being linked to said print engine module, said formatter for formatting incoming unformatted print data files and transmitting formatted print data files to said print engine module for printing;

a memory module being linked to said print engine module via a linkage that bypasses said formatter, said memory module being linked to said marking agent test page control;

at least one test page data file stored in said memory module, said test page data file comprising instructions for printing of a marking agent test page; and

a computer program product comprising computer executable instructions embedded in a computer readable medium, said computer program product being linked to said memory module, said computer program product for:

causing said memory module to accept a prompt from said marking agent test page control;

causing said memory module to retrieve said at least one marking agent test page data file after receiving said prompt;

causing said memory module to transmit said at least one marking agent test page data file to said print engine module via said linkage that bypasses said formatter for printing of said marking agent test page; whereby a marking agent consumption rate may be determined by measuring marking agent consumed in printing said marking agent test page.

17. A printer as defined by claim 16 wherein:

said at least a marking agent test page control comprises a first and a second marking agent test control;

said memory module is linked to each of said first and second marking agent test page controls;

said at least a marking agent test page data file comprises a first and a second marking agent test page data file stored in said memory module, said first marking agent test page data file for producing a first marking agent test page comprising black images, said second marking agent test page data file for producing a second marking agent test page comprising at least a color image;

and wherein said computer program product is further for:

causing said memory module to transmit said first marking agent test page data file to said print engine module via said linkage that bypasses said formatter after receipt of a prompt from said first test page marking agent control; and

causing said memory module to transmit said second marking agent test data file to said print engine module via said linkage that bypasses said formatter after receipt of a prompt from said second marking agent test page control for printing of said second marking agent test page.

18. A computer program product for causing a printer to print a marking agent test page, the computer program product comprising computer executable instructions embedded in a computer readable medium, the computer readable medium contained in the printer, the printer having a print engine module for printing pages from formatted data files, the computer program product for causing the printer to:

accept a prompt from a marking agent test page control on a user accessible printer control panel;

retrieve a stored marking agent test page data file from a memory module after receiving said prompt, said marking agent test page comprising instructions for printing of a marking agent test page;

transmit said marking agent test page data file from said memory module to the print engine module via a linkage that bypasses the formatter for printing of said marking agent test page.

19. A computer program product as defined by claim 18 wherein said computer program product is for causing the printer to:

accept a first prompt from a first marking agent test page control on said user accessible printer control panel;

accept a second prompt from a second marking agent test page control on said user accessible control panel;

retrieve a first stored marking agent test page data file from said memory module after receiving said first prompt, said first marking agent test page data file comprising instructions for printing a first standard test page comprising black images;

retrieve a second stored marking agent test page data file from said memory module after receiving said second prompt, said second marking agent test page data file comprising instructions for printing a second test page comprising at least a color image;

transmit said first marking agent test page data file after retrieval from said memory module to the print engine module via a linkage that bypasses the formatter for printing of said first marking agent test page; and

transmit said second marking agent test page data file after retrieval from said memory module to the print engine module via a linkage that bypasses the formatter for printing of said second marking agent test page.

20. A computer program product as defined by claim 19 wherein the printer further comprises a printer engine module controller, and wherein the computer readable medium with the embedded computer executable instructions and said memory module are subcomponents of the engine controller.